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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,394	08/23/2001	Duane Fasen	10004405-1	2455

7590 06/19/2003
AGILENT TECHNOLOGIES, INC.
Legal Department, DL429
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EXAMINER

MANDALA, VICTOR A

ART UNIT PAPER NUMBER

2826

DATE MAILED: 06/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/938,394

Applicant(s)

FASEN ET AL.

Examiner

Victor A Mandala Jr.

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

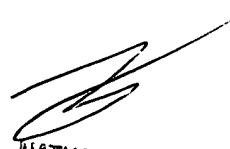
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.


NATHAN J. FLYNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 10.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Applicant's Arguments

1. The Applicant argues that the objection to the drawings in Paper No. 8 is invalid and the examiner has considered the arguments and withdraws the objection as previously stated in Paper No. 11.
2. The Applicant continues to argue that the planarization layer 18 of Daly et al. U.S. Patent No. 5,654,202 is not a bottom antireflection layer. The examiner has reconsidered the arguments and finds that a diazo compound is used as a pigment in a antireflection layer as stated in U.S. Patent Publication No. 20010055730 Ishibashi et al. Paragraph 0037 Lines 3-6 and as the same in U.S. Patent No. 5,879,853 Azuma. The examiner retracts the 35 U.S.C. 102(b) rejection as being anticipated by U.S. Patent No. 5,654,202 Daly et al. Claims 13-23 will be further examined.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13 and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,258,608 Uchiya.

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3. Referring to claim 13, an image sensor system comprising: an active image sensing device structure, (Col. 2 Lines 52-53); a color filter array, (Figure 1E #11, 15, & 19); and a bottom antireflection coating, (Figure 1E #5 & 6 and Col. 3 Lines 20), disposed between the color filter array, (Figure 1E #11, 15, & 19), and a surface of the active image sensing device structure, (Figure 1E #2).
4. Referring to claim 16, wherein the bottom antireflection coating, (Figure 1E #5 & 6 and Col. 3 Lines 20), has a thickness selected to improve an optical transmission characteristic of one or more colors of the color filter array, (Col. 3 Lines 20-29).
5. Referring to claim 17, wherein the bottom antireflection coating, (Figure 1E #5 & 6 and Col. 3 Lines 20), is substantially transmissive to radiation in a wavelength range of about 400nm to about 700nm, (Col. 3 Lines 20-23 & Col. 4 Lines 14).
6. Referring to claim 18, wherein the color filter array comprises a plurality of colored photoresist structures, (Figure 1E #11, 15, & 19).
7. Referring to claim 19, wherein the bottom antireflection coating, (Figure 1E #5 & 6 and Col. 3 Lines 20), has a substantially higher plasma etch rate than the color filter array, (Figure 1E #11, 15, & 19).
8. Referring to claim 21, wherein the bottom antireflection coating, (Figure 1E #5 & 6 and Col. 3 Lines 20), has a thickness less than approximately 200 nm, (Col. 3 Lines 24-25).
9. Referring to claim 22, wherein the bottom antireflection coating, (Figure 1E #5 & 6 and Col. 3 Lines 20), has a thickness of about 60 nm, (Col. 3 Lines 24-25).

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10. Referring to claim 23, wherein the bottom antireflection coating, (Figure 1E #5 & 6 and Col. 3 Lines 20), is present only in regions under color filter array material, (Figure 1E #11, 15, & 19).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent No. 5,258,608 Uchiya.

11. Referring to claim 15, wherein the bottom antireflection coating, (Figure 1E #5 & 6 and Col. 3 Lines 20), comprises a light absorbing polymeric film forming material.

Uchiya discloses the claimed invention except for the antireflection layer being made out of a polymer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the antireflection film out of a polymer, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

In re Leshin, 125 USPQ 416.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent No. 5,258,608 Uchiya in view of U.S. Patent No. 6,106,995 Dixit et al.

12. Referring to claim 14, wherein the bottom antireflection, (Uchiya Figure 1E #5 & 6 and Col. 3 Lines 20), coating comprises a dyed organic film-forming material, (Dixit et al. Col. 2 Lines 9-11 and Col. 2 Lines 15&16).

It would be obvious to combine the teachings of Uchiya and the teachings of Dixit et al. because the dyed organic antireflection film reduces the reflectivity from the substrate allowing proper sensing from the sensor. Uchiya discloses the claimed invention except for an organic antireflection layer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use an organic antireflection layer as taught in Dixit et al., since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 13 & 20 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. Lin et al. 6,242,730 Lin et al.

13. Referring to claim 13, an image sensor system comprising: an active image sensing device structure, (Figure 3 and Col. 3 Lines 30-36); a color filter array, (Figure 3 #312 and Col. 3 Line 66); and a bottom antireflection coating, (Figure 3 #306 and Col. 3 Lines 61-62), disposed between the color filter array, (Figure 3 #312 and Col. 3 Line 66), and a surface of the active image sensing device structure, (Figure 3 and Col. 3 Lines 30-36).

14. Referring to claim 20, wherein the active image sensor device structure comprises a complementary metal-oxide-semiconductor (CMOS) image sensor, (Col. 3 Lines 30-36).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor A Mandala Jr. whose telephone number is (703) 308-6560. The examiner can normally be reached on Monday through Thursday from 8am till 6pm..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (703) 308-6601. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

VAMJ
June 15, 2003